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TECHNOLOGY CENTER R3700

REMARKS

Initially, Applicants' attorney expresses his appreciation for the personal Examiner's interview that was conducted on February 3, 2004, at the United States Patent and Trademark Office. A copy of the Interview Summary prepared by the Examiner is attached hereto. A Request for Continued Examination is being filed contemporaneously with the present Amendment, as is a petition to extend by one month the time for response to the final Office Action.

The amendments made to Claims 1 and 10 are consistent with the claim language proposed by Applicants' attorney at the Examiner's interview. Claim 20 has been amended to correct an informality resulting from the amendment of Claim 10. Other minor editorial revisions, which were not discussed at the interview, have also been made to several of the pending claims.

Turning now to the grounds of rejection, the Examiner has rejected Claims 1-6, 8 and 9 of the present Application under 35 U.S.C. § 103(a) over Mühling, et al. U.S. Patent No. 5,169,400 ("the Mühling, et al. '400 Patent") in view of Massa U.S. Patent No. 5,030,048 ("the Massa '048 Patent"). While the Examiner acknowledges that the Mühling, et al. '400 Patent does not disclose a bone screw that shrinks to form a closely mated fit between the bore of the screw and a driver such that the driver may be removed from the bore, he has asserted that the tool holder disclosed in the Massa '048 Patent evidences the formation of a shrink-fit between the bore of the tool holder and a driver such that the driver is removable from the bore. Referring to FIG. 1 of the Massa '048 Patent, the tool holder has an inner sleeve that forms the bore and an alloy contained between the inner sleeve and the body of the tool holder. As explained at Column 3, lines 52-62, the alloy shrinks when heated, allowing the inner sleeve to expand radially outward, enlarging the bore so that a tool can be inserted. When the alloy cools, it expands and forces the inner sleeve radially inward to grip the tool. To remove the tool, it is necessary to reheat the tool holder, thus expanding the inner sleeve and, thereby, enlarging the bore.

In the present invention, as was discussed during the interview, the process of heating the bone screw, then cooling it, causes the bore of the bone screw to shrink against the driver so that the cross-sectional shape of the bore is closely mated with the cross-sectional shape of the driver. In contrast to the tool holder of the Massa '048 Patent, the shape of the bore is set once the bone screw has cooled. It is inherent in the shrink-fit process that reheating the bone screw will not cause the bore to expand. As stated in the amended Claim 1, the driver can be withdrawn from the bore without altering the cross-sectional shape of the bore. This feature makes it unnecessary to manipulate the bone screw to remove the driver after the bone screw has been inserted into tissue. Such manipulation could adversely affect the integrity of the bone screw or damage the adjacent tissue.

With regard to the Examiner's rejection of method Claims 10-20, the Examiner states that the "steps, as set forth, would have obviously been carried out in the operation of the device, as set forth above." As the quoted reading is somewhat unclear to Applicants' attorney, it is assumed that the method claims have been rejected on the same basis as apparatus Claims 1-9. As Applicants believe that apparatus Claims 1-9 are now in condition for allowance, Applicants respectfully urge the allowance of method Claims 10-20. Moreover, Applicants note that Claim 10 has been amended to clarify that the recited method includes the step of withdrawing the driver from the bore of the bone screw without altering the cross-sectional shape of the bore, as is recited in amended apparatus Claim 1.

For the reasons stated above, Applicants believe that the present application is in condition for allowance and respectfully urge the allowance of the claims presented therein. If the Examiner believes that there are additional issues to be addressed that may be resolved through a telephone interview, he is respectfully urged to contact Applicants' attorney at the telephone number provided below.

The Examiner is hereby authorized to charge the fees for the Request for Continued Examination and the one-month extension petition to Deposit Account No. 501402.

No additional fees are believed to be due in connection with the submission of this Amendment.  
If any such fees are due, including extension and petition fees, the Examiner is hereby authorized to charge them to Deposit Account No. 501402.

Respectfully Submitted,

McCARTER & ENGLISH, LLP

A handwritten signature in black ink, appearing to read 'William Smith', is written over the printed name.

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